

We claim:

1. A pump for moving a product, comprising:  
5 a separating apparatus;  
a vacuum source for providing a vacuum to the separating apparatus; and  
a pressure valve apparatus for allowing the product to be removed from the separating apparatus.
- 10 2. The pump of claim 1, wherein:  
the separating apparatus is a cyclonic separator.
3. The pump of claim 1, and further including:  
a forced air source for blowing the product out of the pump.  
15
4. The pump of claim 3, wherein:  
the forced air source is an air pump; and  
the vacuum source is an air pump.
- 20 5. The pump of claim 3, wherein:  
the forced air source and the vacuum source are a single air pump.
6. The pump of claim 3, and further including:  
a cooling apparatus for cooling air exiting the forced air source.  
25
7. The pump of claim 1, and further including:  
a demister for removing moisture from air entering the vacuum source.
8. The pump of claim 1, wherein:  
30 the pressure valve apparatus is a rotary dump valve.

9. The pump of claim 1, wherein:  
the pump is adapted to pump a wine product.
- 5 10. The pump of claim 1, wherein:  
the pump is adapted to pump wine must.
11. The pump of claim 1, wherein:  
the pump is adapted to pump wine pomace.
- 10
12. A wine must pump for pumping a wine product, comprising:  
a separator for separating the wine product from air;  
a vacuum source for drawing the wine product into the separator;  
a valve apparatus for allowing the wine product to fall out of the separator into a  
15 depository; and  
a compressed air source for blowing the wine product out of the wine must pump.
13. The wine must pump of claim 12, wherein:  
the vacuum source and the compressed air source are an air pump.
- 20
14. The wine must pump of claim 12, wherein:  
the vacuum source and the compressed air source are an air pump, wherein at least some  
air drawn out of the separator is used to blow the wine product out of the wine must pump.
- 25 15. The wine must pump of claim 12, wherein:  
the wine product drops out of the depository into a mixing valve; and  
air from the compressed air source blows the wine product out of the mixing valve.
16. The wine must pump of claim 12, and further including:  
30 a heat exchange apparatus for removing heat from air exiting the compressed air source.

17. The wine must pump of claim 12, and further including:  
a demisting apparatus for removing moisture from air exiting the separator.

5 18. The wine must pump of claim 12, wherein:  
the separator is a cyclonic separator.

19. The wine must pump of claim 12, and further including:  
an in line silencer for reducing noise caused by air exiting the separator.

10

20. The wine must pump of claim 12, and further including:  
a silencer for reducing noise from the compressed air source.

21. The wine must pump of claim 20, wherein:  
15 the silencer is connected such that air entering the compressed air source goes through the  
silencer.

22. The wine must pump of claim 20, wherein:  
the silencer is connected such that air exiting the compressed air source goes through the  
20 silencer.

23. A method for moving a wine product, comprising:  
applying a vacuum to a separator to draw the wine product into the separator;  
removing the wine product from the separator into a depository; and  
25 blowing the wine product from the depository.

24. The method of claim 23, wherein:  
the vacuum is created by an air pump; and  
air exiting the air pump is used to blow the wine product from the depository.

30

25. The method of claim 24, wherein:  
the air is cooled.
26. The method of claim 23, wherein:  
5 the wine product falls from the depository into a mixing valve;  
the wine product is mixed with compressed air in the mixing valve; and  
the wine product is forced out of the mixing valve by the force of the compressed air.
27. The method of claim 23, wherein:  
10 the wine product is a crushed grape product.
28. The method of claim 23, wherein:  
the wine product includes a must.
- 15 29. The method of claim 23, wherein:  
the wine product includes a pomace.
30. A method for moving a product, comprising:  
drawing the product into a chamber via vacuum;  
20 drawing gasses from said chamber via vacuum to separate said gasses from said product;  
and  
pushing the product from said chamber via compressed gasses.
31. A pump comprising:  
25 means for drawing a product and gas mixture into a chamber;  
means for separating the product from the gas; and  
means for removing the product from the chamber.

32. A pump comprising:

a chamber;

an inlet port coupled to said chamber to facilitate the flow of product into said chamber;

5 an outlet port for discharging said product from said pump;

a vacuum port coupled to said chamber;

a vacuum source coupled to said vacuum port to provide a negative pressure in said chamber, whereby said product can be drawn into said chamber through said inlet port;

a pressurized gas source; and

10 a mixing valve coupled to said chamber, said outlet port, and said pressurized gas source, whereby said product can be pushed out said outlet port by said pressurized gas.